

## ABSTRACT

Methods for reducing kidney damage induced by radiographic contrast medium or another nephrotoxic drug or substance administered to a patient include reducing the temperature of the patient by positioning an endovascular heat exchange device in a blood vessel of the patient and adjusting the temperature of the device to cause a reduction in the patient's temperature. The patient's temperature may be reduced prior to, during, and/or after, the administration of the contrast medium. The methods may also include administering an anti-shivering mechanism to the patient to reduce shivering caused by the reduction in the patient's temperature. The methods may also include disrupting the laminarity of blood flow around the device to enhance the temperature exchange between the device and the blood flowing around the device. The endovascular heat exchange device may be an endovascular heat exchange catheter. The device may be a component of a system, which includes a temperature controller in communication with the endovascular heat exchange device to reduce the temperature of the patient to reduce the temperature of the patient's kidneys.